

The analysis of the Ural higher education institutions and business interaction: the modern situation and development

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Abstract. This article is devoted to the research of the Ural industrial enterprises demand for scientific research and development activity created by leading higher educational institutions of the Ural region. The modern situation of the enterprises and higher educational institutions interaction is shown as well as the most actual directions of cooperation are analyzed in the article. The main problems interfering in efficiency increase of joint projects are revealed on the basis of results of sociological research.

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Introduction

Lack of innovative business behavior and research of higher education institutions and business structures coordination is the major obstacle in a way of competitiveness increase in the modern Russian economy. In the Russian Federation the Concept of research development and innovative activity in higher education establishments for the period till 2015 as a strategic objective established contribution increase of higher education institutions into technological modernization of a real sector of national economy through the development of their research and innovative activity [1]. In the Concept it is noted that need of a role strengthening of higher education institutions for creation, application and dissemination of knowledge is explained by a universal trend in this sphere. So the model of global research university (global research university) within which universities became active players not only in the production of new knowledge, but also in their distribution and application through the innovative activity around the world was widely adopted. The specified aspects are considered in works of foreign classics of management E. Deming, D.B. Johnston, J. Dzhuran, A. Distervega, P.F. Druker, K. Isikava [2, 3, 4, 5, 6].

Techniques Authors conducted the research of large mechanical engineering enterprises of Sverdlovsk region for the purpose of studying of existing and perspective demand of business community for the research and development, carried out by higher education institutions. Technical top managers of 35 enterprises took part in the poll. The research of chairs of Yekaterinburg higher educational institutions with the region enterprises

cooperation was conducted for research improvement.

Main part

According to N.G.Hayrullina the consideration of reference points marked in the Concept, the experience of higher education institutions and business structures interactions in modern Russia are obviously necessary for carrying out the complex sociological research directed on of the main contradictions identification and establishment difficulties of such collaboration and an assessment of its further development [7].

The research directed on studying of the existing and potential demand of large enterprises of mechanical engineering on research and development activity, carried out by regional higher education institutions is especially actual for the Ural region. The growing interest in such a business community is explained by its exclusive role in regional economy and its innovative processes. So according to the research of the analytical center "Expert-Ural" in 2011 the mechanical engineering appeared the leader in the financing of scientific research in Sverdlovsk region. An oil and gas industry and also a transport segment of area are next in a rating of research and development financing, but their financing of this sphere is 4-6 times less than at the enterprises of mechanical engineering [8].

It should be noted that results of researches concerning prospects of their research cooperation with higher education institutions of the Ural industrial companies recently conducted by economists and sociologists are not optimistic. So the list of preferences of the industrial enterprises is

provided in A. Merenkov and N. Sivkova's research in practice of their interaction with higher education institutions. The preferable enterprises and higher education institutions collaboration forms are given below (in % to the number of respondents) [9]:

- to provide practice of students (100%);
- to participate in the procedure of diploma defence (50%);
- to employ university graduates without work experience (43%);
- to carry out professional training courses on the basis of higher education institutions (43%);
- to order consulting services (36%);
- to pay for training courses of experts necessary for the enterprise (29%);
- to pay grants to the most talented students (29%);
- to take part in financing of innovative development for local production (21%);
- to take part in realization and development of joint grants (21%);
- to take part in boards of trustees activity (21%);
- to provide material and technical base of the enterprise for research of higher education institutions (21%);
- to take part in the equipment of laboratories (14%);
- to finance the conduction of scientific researches for local production (7%).

As it was showed in the research in 2010 the motivation for active higher educational institutions cooperation for development of technological innovations had only a small number of the industrial enterprises. Thus representatives of large plants were ready to collaborate but small business isn't focused on development and implementation of any innovations together with higher education institutions [9, page 73]. Similar results were received in the research and development demand from the large-scale industry, conducted by laboratory of foresayt-researches of the Ural federal university together with the analytical center "Expert-Ural": "The distinct need for unique decisions, a know-how is formulated, as a rule, by large business that works at the world markets: scientific development is necessary for it to reduce a technological gap with competitors. The companies of the average level are focused on domestic market while setting modernization tasks of operating technologies and their adaptations to the production" [8].

Results of innovative activity research of the Ural and Western Siberian companies conducted by the analytical center "Expert-Ural" in 2012 gave more optimistic estimates of small business potential

in the innovative sphere. It appeared that about 40% of positions in this rating are taken by the representatives of large business accumulating more than 65% of total amount of research and development means of rating companies; about 30% – so-called large medium business from 27% of all expenses; and only 0,6% – small, average and micro business. Besides, in 2011 small business showed the highest gain of expenses on science – 248% [10].

The rating of the most active companies in financing of scientific researches and development was made on the basis of the analysis of 35 companies activity in Sverdlovsk, Chelyabinsk, Tyumen areas and Perm region. The data research allowed to reveal the following characteristic features of higher education institutions and the industrial enterprises collaboration in the region.

1. The range of forms and types of realized research of higher education institutions and Sverdlovsk region enterprises cooperation is extremely small. The industry representatives noted only three possible alternatives: single joint research activity; strategic cooperation contract; corporate training and consulting. Representatives of the scientific and educational spheres specify sale of ready samples, patents and development of technical offers.

At the same time, experts in the field of studying of higher education institutions and business structures relationship allocate over 10 possible forms of realization of such a relationship. There are: agreements on joint development or joint ventures; consortium with public financing; programs of the public research organizations; scientific advisory boards; the researches transferred to outsourcing; consulting projects, etc.

2. The scale of research of higher education institutions and the Ural industrial enterprises cooperation is not significant – less than 15% of research and development cooperation with higher education institutions.

In this regard the interesting universities interaction experience with innovative economy sector in foreign countries is represented. A. Malakhov confirmed it with the of historical and modern data. So, for example, in 1972 according to the report of the USA National scientific fund the contribution of the industry to financing of research activity of universities made only 0,7% of all funds allocated by it for researches and scientific and technical development; in 1980 – 0,9%; in 1990 – 1,4%. During the period from 1994 to 2000 this indicator decreased to 1,2% and then rose very slightly.

At the same time A. Malakhov notes that in the American industry the tendency to outsourcing of

research activity – to placement of orders for carrying out basic researches was outlined in universities, and also to creation of new alliances with other market participants of the of research and technologies along with universities [11].

3. Technical top management of the Sverdlovsk region industrial enterprises is mainly satisfied with established practice of research cooperation with higher education institutions. 86% of respondents noted that everything suits them in this sphere.

Our conclusions correlate with other authors opinion dealing with issues of higher education institutions and real sector of economy interaction. So, R. Prikhodko estimating a condition of the higher education in modern Russia, fairly notes that low demand of highly qualified specialists is the main reason of poor knowledge quality of university graduates. According to the author, the Russian economy that does not make competitive products, services and information, it doesn't require high quality experts with complex knowledge; such type of economy in principle is not oriented on competitive staff with the higher and postgraduate professional education [12].

4. The major part of higher education institutions isn't satisfied with research cooperation with the industrial enterprises. The respondents answers about their satisfaction degree are considered: 37,5% of respondents are satisfied, 50,0% are not generally satisfied, 12,5% are not completely satisfied .

5. The Sverdlovsk region industrial enterprise demand for the research and development which is carried out by higher education institutions has an increased potential.

Table. Research services suppliers at the industrial enterprises

Suppliers	Share of the enterprises which have specified the supplier	
	now	in plans
HIGHER EDUCATION INSTITUTION	71,4%	100,0%
SCIENTIFIC RESEARCH INSTITUTE	71,4%	85,7%
internal research structures of the company	57,1%	71,4%
private patents owners	14,3%	14,3%

Technical enterprises top managers answers on a question about suppliers of research services are shown in the table. As it can be seen higher education institutions have the large increase of a potential demand.

According to author's research, 57% of the region industrial enterprises carry out constant market monitoring for the purpose of a choice of research services supplier. Such an active position of the enterprises, in our opinion, can be decreased at their research and development demand of higher education institutions.

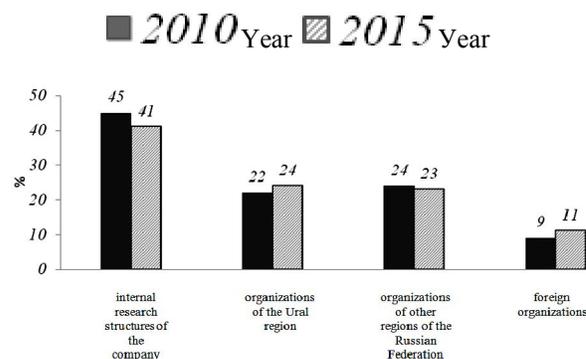


Fig. 1. Change of demand structure of a large-scale industry The Uralo-Siberian region on research and development [10]

Results of the conducted research correlate with the data obtained by laboratory of forsayt-researches URFA together with the analytical center "Expert-Ural". Authors of the project note that in long-term prospect the share of own research structures of the companies will be reduced (on the average by 4 items), and shares of the Ural research organizations and foreign suppliers of research and development can grow (by 2 items everyone) [8, 10]. The forecast of change in demand structure of the Ural-Siberian region industrial enterprises for research and development is submitted in fig. 1.

Conclusion

It becomes obvious that the education modernization as strengthening of business and university community interaction is an indispensable condition for creation of sustainable, spiritual, intellectual, scientific and technical, social and economic development of the Russian society, maintenance of its stability, integrity and national security [13]. Economy and technologies development in every civilized society is impossible without new knowledge, educational technologies, innovative progress and the qualified experts

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